

## 5.10 Socioeconomics

### 5.10.1 Introduction

The Applicant proposes to develop a solar energy project called the Ivanpah Solar Electric Generating System (Ivanpah SEGS). It will be located in southern California's Mojave Desert, near the Nevada border, to the west of Ivanpah Dry Lake. The project will be located in San Bernardino County, California, on federal land managed by the Bureau of Land Management (BLM). It will be constructed in three phases: two 100-megawatt (MW) phases (known as Ivanpah 1 and 2) and a 200-MW phase (Ivanpah 3). The phasing is planned so that Ivanpah 1 (the southernmost site) will be constructed first, followed by Ivanpah 2 (the middle site), then Ivanpah 3 (the 200-MW plant on the north), though the order of construction may change. Each 100-MW site requires about 850 acres (or 1.3 square miles); the 200-MW site is about 1,660 acres (or about 2.6 square miles). The total area required for all three phases, including the Administration/Operations and Maintenance building and substation, is approximately 3,400 acres. The Applicant has applied for a right-of-way grant for the land from BLM. Although this is a phased project, it is being analyzed as if all phases are operational.

The heliostat (or mirror) fields focus solar energy on the power tower receivers near the center of each of the heliostat arrays (the 100-MW plants have three arrays and the 200-MW plant has four arrays). In each plant, one Rankine-cycle reheat steam turbine receives live steam from the solar boilers and reheat steam from one solar reheater – located in the power block at the top of its own tower. The solar field and power generation equipment are started each morning after sunrise and insolation build-up, and shut down in the evening when insolation drops below the level required to keep the turbine online.

Ivanpah 1, 2 and 3 will be interconnected to the Southern California Edison (SCE) grid through upgrades to SCE's 115-kilovolt (kV) line passing through the site on a northeast southwest right-of-way. These upgrades will include the construction by SCE of a new 220/115-kV breaker-and-a-half substation between the Ivanpah 1 and 2 project sites. This new substation and the 220-kV upgrades will be for the benefit of Ivanpah and other interconnection customers in the region. The existing 115-kV transmission line from the El Dorado substation will be replaced with a double-circuit 220-kV overhead line that will be interconnected to the new substation. Power from Ivanpah 1, 2, and 3 will be transmitted at 115 kV to the new substation. SCE plans to add three new 115-kV lines to increase capacity to the existing El Dorado-Baker-Cool Water-Dunn Siding-Mountain Pass 115-kV line heading southwest. The timing of this upgrade depends upon the development of wind projects ahead in the queue, and is not affected by the Ivanpah SEGS project.

Each phase of the project includes a small package natural gas-fired start-up boiler to provide heat for plant start-up and during temporary cloud cover. The project's natural gas system will be connected to the Kern River Gas Transmission Line, which passes less than half a mile to the north of the project site. Raw water will be drawn daily from one of two onsite wells, located east of Ivanpah 2. Each well will have sufficient capacity to supply water for all three phases. Groundwater will go through a treatment system for use as boiler make-up water and to wash the heliostats. To save water in the site's desert environment, each plant will use a dry-cooling condenser. Water consumption is, therefore, minimal

(estimated at no more than 100 acre-feet/year for all three phases). Each phase also includes a small onsite wastewater plant located in the power block that treats wastewater from domestic waste streams such as showers and toilets. A larger sewage package treatment plant will also be located at the Administration/Operations and Maintenance area, located between Ivanpah 1 and 2. Sewage sludge will be removed from the site by a sanitary service provider. No wastewater will be generated by the system, except for a small stream that will be treated and used for landscape irrigation. If necessary, a small filter/purification system will be used to provide potable water at the Administration Building.

This section discusses the environmental setting, consequences, regional and local impacts, and mitigation measures associated with the socioeconomic aspects of the Ivanpah SEGS. Section 5.10.2 presents the laws, ordinances, regulations, and standards (LORS) applicable to socioeconomics. Section 5.10.3 describes the environment that may be affected by Ivanpah SEGS construction and operation. Section 5.10.4 identifies environmental impacts from development of the power plant, and Section 5.10.5 discusses cumulative effects. Environmental Justice issues are discussed in Section 5.10.6. Mitigation measures are discussed in Section 5.10.7. Section 5.10.8 presents the agencies involved and provides agency contacts. Section 5.10.9 presents the required permits and permitting schedule. Section 5.10.10 provides the references used to prepare this section.

## **5.10.2 Laws, Ordinances, Regulations, and Standards**

### **5.10.2.1 Federal LORS**

A summary of the LORS, including the project's conformance to them, is presented in Table 5.10-1.

Civil Rights Act of 1964, Public Law 88-352, 78 Stat. 241 (codified as amended in various sections of 42 U.S.C.) Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin by all federal agencies or activities receiving federal financial assistance.

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires U.S. Environmental Protection Agency (EPA) and other federal agencies to identify and address whether adverse human health or environmental effects are likely to fall disproportionately on minority and/or low-income members of the community (EPA, 1996). This applies only to federal agencies, not agencies receiving federal funds.

### **5.10.2.2 State LORS**

Government Code Sections 65996 and 65997, provide the exclusive methods of considering and mitigating impacts to school facilities that might occur as a result of the development of real property.

Education Code Section 17620, listed in Government Code Section 65997 as an approved mitigation method, allows school districts to levy a fee or other requirement against any construction within the boundaries of the school district for the purpose of funding construction of school facilities.

TABLE 5.10-1

Laws, Ordinances, Regulations, and Standards Applicable to Ivanpah SEGS Socioeconomics

LORS	Requirements/ Applicability	Administering Agency	AFC Section Explaining Conformance
<b>Federal</b>			
Civil Rights Act of 1964	Prohibits discrimination on the basis of race, color, or national origin.	Applies to all federal agencies and agencies receiving federal funds.	Section 5.10.5
Executive Order 12898	Avoid disproportionate impacts to minority and low-income members of the community.	Applies only to federal agencies. Does not apply to agencies receiving federal funds.	Section 5.10.5
<b>State</b>			
Government Code Sections 65996-65997	Establishes that the levy of a fee for construction of an industrial facility be considered mitigating impacts on school facilities.	Baker Unified School District charges a one-time assessment fee to mitigate potential school impacts.	Section 5.10.6
Education Code Section 17620	Allows a school district to levy a fee against any construction within the boundaries of the district for the purpose of funding construction of school facilities.	Baker Unified School District charges a one-time assessment fee to mitigate potential school impacts.	Section 5.10.6
<b>Local</b>			
San Bernardino County General Plan, Economic Development Background Report	To increase job creation through business expansion.	Encourages industry to locate in the County to create jobs	Sections 5.10.2.3, 5.10.3.3, 5.10.3.4

### 5.10.2.3 Local LORS

#### 5.10.2.3.1 San Bernardino County

San Bernardino County General Plan's (2007) Economic Development Element calls for a vibrant and thriving local economy that spans a variety of industries, services, and other sectors while recognizing the distinctions between the growth stages of the Valley, Mountain, and Desert Planning Regions in encouraging industrial, office, and professional and local serving employment. The Economic Development Background report (2005) states that the Desert Planning Region (which includes the proposed project site) is just entering Stage 2 of the three-stage pattern of development. Stage 2 is where an area is capable of attracting blue collar and entry level white collar workers and companies that take advantage of undeveloped industrial space.

The Economic Development Agency (ED) is charged with providing comprehensive services and a variety of programs to attract new industry to the County. The ultimate goal

of the ED is to maximize employment opportunities and increase capital investment in the County.

### 5.10.3 Affected Environment

#### 5.10.3.1 Population

San Bernardino County is bordered on the north by Inyo County, to the south by Riverside County, to the west by Los Angeles, Kern, and Orange counties; to the east by Clark County, Nevada, and also by portions of Mojave and La Paz counties in Arizona. There are 24 incorporated cities in San Bernardino County including Fontana, Ontario, Rancho Cucamonga, and San Bernardino. There are five incorporated cities in Clark County, Nevada including Las Vegas.

For purposes of this analysis, the Region of Influence was determined to be the counties of Clark, Nevada and San Bernardino, California. The Las Vegas Valley Urban Area, with an estimated July 1, 2006 population of 1,847,495 is the largest population center in Clark County, Nevada, and about 40 miles north of the project site (Clark County, 2007a). As of January 1, 2007, San Bernardino County's population was estimated at 2,028,010 (DOF, 2007a). Historical and projected population data for the City of Las Vegas, along with San Bernardino and Clark counties are summarized in Table 5.10-2. Annual average compounded population growth rates are summarized in Table 5.10-3. During the 1990s, San Bernardino County's population increased at an average annual rate of 1.9 percent, while the City of Las Vegas grew at an annual average rate of 6.4 percent, slightly higher than Clark County. The average annual growth rates for the 2000-2010 period for San Bernardino and Clark Counties is expected to be 2.2 and 5.1, respectively. San Bernardino and Clark County are expected to have their greatest population growth from 2000 to 2010.

Tables 5.10-2 and 5.10-3 also show the historical and projected population estimates and average annual growth rates in California and Nevada. During the 1990s, the States of California and Nevada grew at an annual rate of 1.30 and 5.22 percent, respectively. Based on population projections by the US Census Bureau, both states are expected to have their greatest relative population growth from 2000 to 2010. Historically, the populations of both San Bernardino and Clark counties have been growing at a slightly higher rate than that of their respective states. However, population growth in the future is expected to decline.

TABLE 5.10-2  
Historical and Projected Populations

Area	1990	1995	2000	2010 (p)	2020(p)	2030(p)
City of Las Vegas	258,295	354,559	478,434	N/A	N/A	N/A
Clark County	741,368	1,035,847	1,375,765	2,258,748	2,946,350	3,358,456
State of Nevada	1,201,833	1,581,578	1,998,257	2,690,531	3,452,283	4,282,102
San Bernardino County	1,418,380	1,573,900	1,709,434	2,133,377	2,456,089	2,762,307
State of California	29,758,213	31,617,000	33,871,648	39,246,767	43,851,741	48,110,671

Source: Department of Finance (DOF), 2007a.; Nevada State Library and Archives, 2007, Clark County, 2007a  
(p) projected  
N/A not available

**TABLE 5.10-3**  
Historical and Projected Annual Average Compounded Population Growth Rates

Area	1990-1995 Percent	1995-2000 Percent	2000-2010 Percent	2010-2020 Percent	2020-2030 Percent
City of Las Vegas	6.5	6.2	N/A	N/A	N/A
Clark County	6.9	5.8	5.1	2.7	1.3
State of Nevada	5.7	4.8	3.0	2.5	2.2
San Bernardino County	2.1	1.7	2.2	1.4	1.2
State of California	1.2	1.4	1.5	1.1	0.9

Source: CH2M HILL.

Table 5.10-4 shows the distribution of racial minority and Hispanic origin population for the census block groups within a 6-mile radius of the proposed Ivanpah SEGS site. The racial minority and Hispanic origin data are from the 2000 U.S. Census data. Of the overall total population within the 6-mile radius, approximately 15.9 percent are racial minority while 10.7 percent are of Hispanic origin<sup>1</sup>.

**TABLE 5.10-4**  
Distribution of Racial/Ethnic Minority Population in Census Block Groups Within a 6-Mile Radius

Census Block Groups	Population	Non- Hispanic White	Minority	Percent Minority	Hispanic Origin*	Percent Hispanic Origin
San Bernardino County (103.02)	476	227	249	52.3	182	38.2
San Bernardino County (103.03)	106	87	19	17.9	13	12.7
Clark County, Nevada (57.03)	2,836	1,912	924	32.6	286	10.1
Clark County, Nevada (58.16)	3,860	3,464	396	10.3	301	7.8
<b>TOTAL</b>	<b>7,278</b>	<b>5,690</b>	<b>1,588</b>	<b>21.8</b>	<b>782</b>	<b>10.7</b>

Source: 2000 Census.

\* Hispanics or Latinos are those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2000 questionnaire—"Mexican, Mexican Am., Chicano," "Puerto Rican," or "Cuban"—as well as those who indicate that they are "other Spanish/Hispanic/Latino." People who identify their origin as "other Spanish/Hispanic/Latino" may be of any race. Thus, the percent Hispanic should not be added to percentages for racial (i.e., minority) categories.

Table 5.10-5 shows the distribution of low-income population for the census block groups within the 6-mile radius of the proposed project site. Of the overall total population for whom poverty is determined 9.7 percent are low-income.

<sup>1</sup> Hispanics or Latinos are those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2000 questionnaire—"Mexican, Mexican Am., Chicano," "Puerto Rican," or "Cuban"—as well as those who indicate that they are "other Spanish/Hispanic/Latino." People who identify their origin as "other Spanish/Hispanic/Latino" may be of any race. Thus, the percent Hispanic should not be added to percentages for racial (i.e., minority) categories.

TABLE 5.10-5

Distribution of Low Income Population by Census Block Groups Within a 6-Mile Radius

Census Block Group	Total Population*	Income below Poverty Level	Percent low-income
San Bernardino County (103.02)	213	43	20.2
San Bernardino County (103.03)	106	29	27.4
Clark County, Nevada (57.03)	2,091	209	10.0
Clark County, Nevada (58.16)	3,860	326	8.5
<b>TOTAL</b>	<b>6,270</b>	<b>607</b>	<b>9.7</b>

Source: 2000 Census.

\* Population numbers are only those for whom poverty was determined and exclude full-time college students.

Figures 5.10-1, and 5.10-2 (figures are located at the end of this subsection) show the percent distribution of minority and low-income populations by 2000 census blocks groups within a 6-mile radius of the proposed Ivanpah SEGS site.

### 5.10.3.2 Housing

As shown in Table 5.10-6, housing stock for San Bernardino County as of January 1, 2007, was 661,668 units. Single-family homes accounted for 492,519 units, multiple family dwellings accounted for 125,594 units, and mobile homes accounted for 43,555 units (DOF, 2007b). New housing authorizations for San Bernardino County in 2005 totaled 16,684 units; about 92 percent were single-family units and 8 percent were multi-family units. These authorizations were valued at \$2.97 million (DOF, 2007c). The median sales price of existing single family homes in the third quarter of 2006 in Riverside/San Bernardino and Las Vegas/Paradise MSAs was \$408,000 and \$318,000, respectively (NAR, 2007). San Bernardino County's vacancy rate has improved a little between 1990 and 2005 (from 14.4 percent to 11.7 percent). Since the vacancy rate is higher than the federal standard of 5 percent, it indicates that housing within the County is not in short supply.

TABLE 5.10-6

Housing Estimates by City and County

Area	Total Units	Single-family	Multi-family	Mobile Homes	Percent Vacant
City of Las Vegas <sup>a</sup>	227,862	138,172	86,530	3,160	4.5
Clark County <sup>a</sup>	740,817	433,317	277,040	30,460	4.4
San Bernardino County <sup>b</sup>	661,668	492,519	125,594	43,555	11.7
California <sup>b</sup>	13,140,388	8,483,149	4,070,251	586,988	5.9

Source: DOF, 2007b; Clark County, 2007b

<sup>a</sup> Estimates are as of July 1, 2006<sup>b</sup> Estimates are as of January 1, 2007

As of July 1, 2006, Clark County had 740,817 housing units, of which 433,317 were single-family homes, 277,040 were multiple family homes and 30,460 were mobile homes (Table 5.10-6). The vacancy rate for Clark County was 4.4 percent, a figure that is lower than the federal standard of 5 percent. Thus, housing within Clark County could be in short supply.

The City of Las Vegas has a vacancy rate of 4.5, slightly below the federal 5 percent standard. Thus, housing could also be in short supply in the City of Las Vegas.

### 5.10.3.3 Economy and Employment

San Bernardino County is part of the Riverside-San Bernardino-Ontario Metropolitan Statistical Area (MSA). Between 2000 and 2006, employment in the Riverside-San Bernardino-Ontario MSA increased by 74,700 jobs or about 7.4 percent. This 7.4 percent increase is twice the overall increase in industry employment in California (3.7 percent) during that same period (CEDD, 2007a). As shown in Table 5.10-7, construction, financial activities, wholesale and retail trade, transportation, warehousing and utilities, and services experienced the largest increases in employment. Although employment in construction increased substantially between 2000 and 2006, the contribution of this sector to the Riverside-San Bernardino-Ontario MSA economy remained relatively small, between 8 and 12 percent. Employment losses were experienced in the agriculture sector.

TABLE 5.10-7  
Employment Distribution in Riverside-San Bernardino-Ontario MSA, 2000 to 2006

Industry	2000		2006		2000-2006	
	Number of Employees	Employment Share (%)	Number of Employees	Employment Share (%)	Percentage Change (%)	Average Annual Compound Growth Rate (%)
Agriculture	21,700	2.1	17,200	1.6	-20.7	-3.8
Natural Resources, Mining	1,300	0.1	1,400	0.1	7.7	1.2
Construction	79,900	7.9	129,500	11.9	62.1	8.4
Manufacturing	119,700	11.9	124,000	11.4	3.6	0.6
Wholesale Trade	38,200	3.8	53,800	5.0	40.8	5.9
Retail Trade	127,000	12.6	171,500	15.8	35.0	5.1
Transportation, Warehousing and Utilities	46,300	4.6	63,800	5.9	37.8	5.5
Information	14,300	1.4	15,200	1.4	6.3	1.0
Financial Activities	35,700	3.5	51,800	4.8	45.1	6.4
Services	334,100	33.1	436,200	40.2	30.6	4.5
Government	18,200	1.8	18,800	1.7	3.3	0.5
<b>Total Employment</b>	<b>1,010,100</b>	<b>100.0</b>	<b>1,084,800</b>	<b>100.0</b>	<b>7.4</b>	<b>1.2</b>

Source: CEDD, 2007a.

Between 2000 and 2005, employment in the Las Vegas-Paradise MSA increased by 173,200 jobs or about 25 percent. This 25 percent increase is almost 10 percent greater than Nevada's net increase (16 percent) during that same period (NDETR, 2007a). As shown in Table 5.10-8, the agriculture and natural resources, and the mining sector were the only sectors that experienced a decline in employment. Although employment in construction increased substantially (53 percent) between 2000 and 2005, the contribution of this sector to the Las Vegas-Paradise MSA only increased by 2 percentage points from 10 percent in 2000 to 12 percent in 2005.

**TABLE 5.10-8**  
Employment Distribution in Las Vegas-Paradise MSA\*, 2000 to 2005

Industry	2000		2005		2000-2005	
	Number of Employees	Employment Share (%)	Number of Employees	Employment Share (%)	Percentage Change (%)	Average Annual Compound Growth Rate %
Agriculture and Natural Resource	N/A	N/A	N/A	N/A	N/A	N/A
Mining	600	0.1	400	0.0	-33.3	-7.8
Construction	66,400	9.5	101,500	11.6	52.9	8.9
Manufacturing	20,200	2.9	25,000	2.9	23.8	4.4
Wholesale Trade	17,700	2.5	22,200	2.5	25.4	4.6
Retail Trade	74,900	10.7	94,000	10.8	25.5	4.6
Transportation, Warehousing and Utilities	27,800	4.0	32,400	3.7	16.5	3.1
Information	14,200	2.0	10,400	1.2	-26.8	-6.0
Financial Activities	38,000	5.4	48,800	5.6	28.4	5.1
Services	368,000	52.7	449,400	51.6	22.1	4.1
Government	70,600	10.1	87,500	10.0	23.9	4.4
<b>Total Employment</b>	<b>698,400</b>	<b>100.0</b>	<b>871,600</b>	<b>100.0</b>	<b>24.8</b>	<b>4.5</b>

Source: NDETR, 2007a.

\* In 2000, the MSA was titled Las Vegas and not Las Vegas-Paradise

Table 5.10-9 provides more detail on the characteristics of the regional labor force. It shows 2006 employment data for Las Vegas-Paradise MSA, San Bernardino County and California. San Bernardino County has unemployment rates that are lower than California. CEDD does not project future unemployment rates.



TABLE 5.10-9  
Employment Data, 2006

Area	Labor Force	Employment	Unemployed Labor Force	Unemployment Rate (%)
Las Vegas- Paradise MSA	890,800	857,800	33,000	3.7
San Bernardino County	884,100	842,300	41,800	4.7
California State	17,901,900	17,029,300	872,600	4.9
Nevada State	1,295,085	1,240,868	54,217	4.2

Source: CEDD, 2007b; NDETR, 2007b

#### 5.10.3.4 Fiscal Resources

The local agencies with taxing power include San Bernardino County, Clark County and City of Las Vegas. San Bernardino County's estimated summary of expenditures and revenues are presented in Table 5.10-10. The County's revenues have shown steady growth from year-to-year. From FY 2004 to FY 2005, revenues grew almost 12 percent. From FY 2005 to FY 2006, the revenues continued to grow almost 23 percent. The major source of revenues for the county are intergovernmental revenues (about 53 percent), followed by charges for current services (about 16 percent), and taxes (about 11 percent). Revenue from property taxes comprises about 6 percent of the County's total revenue.

TABLE 5.10-10  
San Bernardino County Expenditures and Revenue (\$ Thousands)

	FY 2004	FY 2005	FY 2006
<b>Expenditures for Countywide Operations</b>			
Admin/Exec	\$371,338	\$410,301	\$462,158
Contingencies	\$109,327	\$96,968	\$59,124
Financial Administration	\$6,000	\$6,916	\$6,916
Debt Service	\$22,537	\$21,737	\$21,137
Economic Development Agency	\$4,040	\$7,885	\$3,845
Fiscal Group	\$43,772	\$48,172	\$55,580
Human Services	\$805,513	\$852,268	\$837,760
Law & Justice	\$541,669	\$607,265	\$65,595
Public And Support Services	\$76,276	\$85,074	\$99,187
Total General Fund	\$1,913,119	\$2,067,145	\$2,157,013
<b>Revenues</b>			
Property Taxes	\$167,755	\$327,127	\$415,936
Sales and Other Taxes	\$152,225	\$186,510	\$207,443
Intergovernmental Revenue	\$1,596,790	\$1,581,198	\$1,622,031
Charges for Current Services	\$478,882	\$518,800	\$568,348
Other Revenue	\$115,608	\$125,640	\$130,456
Operating Transfers In	\$156,713	\$179,257	\$275,104

**TABLE 5.10-10**  
San Bernardino County Expenditures and Revenue (\$ Thousands)

	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>
Fund Balance/Net Assets	\$250,346	\$270,079	\$329,871
General Fund Unreserved Fund Balance	\$88,029	\$121,637	\$100,699
Use of Reserves	\$1,154	\$2,254	\$6,064
Contributions to Reserves	(\$3,391)	(\$21,403)	(\$35,453)
Total Other Financing	\$492,852	\$551,823	\$676,285
<b>Total Revenues and Financing Sources</b>	<b>\$3,004,112</b>	<b>\$3,291,098</b>	<b>\$3,620,501</b>

Source: San Bernardino County, 2007.

Numbers may not add up due to independent rounding.

As shown in Table 5.10-11, the General Fund revenue for the City of Las Vegas has been growing steadily over the last few fiscal years. The major source of revenues for the City are the intergovernmental revenues (about 31 percent), followed by charges for services (about 14 percent), and taxes (about 9 percent). Revenue from property taxes comprises about 8 percent of the County's total revenue.

**TABLE 5.10-11**  
City of Las Vegas General Fund Expenditures and Revenue (\$ Thousands)

	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
<b>Expenditures</b>			
Public Safety	\$292,833	\$314,802	\$387,093
Public Works	\$91,839	\$139,931	\$283,657
Culture & Recreation	\$81,568	\$95,040	\$307,084
Economic Development and Assistance	\$20,864	\$22,205	\$89,293
Judicial	\$23,021	\$26,169	\$31,521
General Government	\$141,465	\$164,150	\$309,401
Transit Systems	\$1,547	\$1,316	\$1,496
Health	\$2,422	\$2,849	\$3,005
Welfare	\$981	\$1,019	\$1,344
Intergovernmental Expenditure	\$4,209	\$8,419	\$9,338
Sanitation	\$55,845	\$59,388	\$65,873
Debt Service	\$34,816	\$82,546	\$38,461
<b>Total Expenditures</b>	<b>\$751,412</b>	<b>\$917,834</b>	<b>\$1,527,565</b>
<b>Revenues</b>			
Property Taxes	\$99,911	\$108,092	\$119,566
Other Taxes	\$6,322	\$7,954	\$6,443
Licenses and Permits	\$90,038	\$98,845	\$105,750

**TABLE 5.10-11**  
City of Las Vegas General Fund Expenditures and Revenue (\$ Thousands)

	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Intergovernmental Revenue	\$365,199	\$442,187	\$685,122
Charges for Services	\$169,587	\$181,211	\$272,589
Fines and Forfeits	\$16,940	\$17,917	\$18,552
Special Assessments	\$1,662	\$943	\$1,241
Miscellaneous	\$43,984	\$54,315	\$57,363
Proceeds Long-Term Debt	\$23,388	\$125,011	\$38,215
Sale of Fixed Assets	\$309	\$4,161	\$100
Fund Balance Carryover	\$379,128	\$401,420	\$469,308
<b>Total Revenue</b>	<b>\$1,196,469</b>	<b>\$1,442,055</b>	<b>\$1,774,249</b>

Source: City of Las Vegas, 2007.  
Numbers may not add up due to independent rounding.

### 5.10.3.5 Education

There are a total of 33 elementary, high school, and unified school districts in San Bernardino County. The proposed Ivanpah SEGS site is within the boundaries of the Baker Valley Unified School District, which has a total of three schools. The three schools are: Baker Elementary, Baker Middle, and Baker High school. All three schools are close to the proposed project site and are located at 72100 School House Lane, Baker. Current, as well as historical, enrollment figures for the combined Baker Valley Unified School District (which includes the above three schools) are presented in Table 5.10-12. As shown in the table, the current enrollment levels for the School District have decreased by 10 students (or 5 percent) over the prior year. Projected enrolment in the kindergarten class of 2007-08 is expected to be 20 students and the projected enrollment for grades 1-12 are assumed to be those from grades K-12 from the preceding year's enrollment (DeLeon, 2007).

The City of Las Vegas is served by the Clark County School District which operates 193 elementary schools in the fastest growing county in the country. Student enrollment over the last three academic years for Clark County School District is shown in Table 5.10-12.

**TABLE 5.10-12**  
Current and Projected Enrollment by Grade

<b>Grade Level</b>	<b>Baker Valley Unified School District</b>			<b>Clark County School District</b>		
	<b>Enrollment (2004-05)</b>	<b>Enrollment (2005-06)</b>	<b>Current Enrollment (2006-07)</b>	<b>Enrollment (2004-05)</b>	<b>Enrollment (2005-06)</b>	<b>Current Enrollment (2006-07)</b>
Kindergarten	21	15	21	21,800	22,343	23,391
First	15	20	13	23,166	24,160	24,861
Second	22	19	19	22,718	23,509	24,886
Third	19	19	18	22,385	23,226	24,316

TABLE 5.10-12  
Current and Projected Enrollment by Grade

Grade Level	Baker Valley Unified School District			Clark County School District		
	Enrollment (2004-05)	Enrollment (2005-06)	Current Enrollment (2006-07)	Enrollment (2004-05)	Enrollment (2005-06)	Current Enrollment (2006-07)
Fourth	10	19	16	22,916	23,115	23,907
Fifth	19	9	16	22,491	23,737	23,846
Sixth	24	19	10	23,236	23,682	24,711
Seventh	19	21	16	23,208	23,763	24,454
Eighth	17	16	16	23,098	23,998	24,697
Ninth	12	18	16	24,272	27,372	29,095
Tenth	14	11	17	21,087	22,709	23,753
Eleventh	17	14	12	15,145	15,886	16,984
Twelfth	12	11	11	15,204	14,215	14,849
TOTAL	221	211	201	280,726	291,715	303,750

Source: De Leon 2007; ED-Data, 2007; NDE, 2007

### 5.10.3.6 Public Services and Facilities

This section describes public services in the project area.

#### 5.10.3.6.1 Law Enforcement

The proposed Ivanpah SEGS site comes under the jurisdiction of the San Bernardino County Sheriff's Office, which is headquartered at 655 East 3rd Street in San Bernardino. The Sheriff's Office serves a number of small cities and the unincorporated areas in San Bernardino County. The Sheriff's Office has a residence post in the City of Baker. The station for the region is located in Barstow. Response to an emergency from the proposed project site would originate out of the Baker residence post where two deputies are staffed. Response time to an emergency is expected to be 45 minutes or less (Hubbard, 2007).

The California Highway Patrol (CHP) is the primary law enforcement agency for state highways and roads. Services include law enforcement, traffic control, accident investigation, and the management of hazardous materials spill incidents.

#### 5.10.3.6.2 Fire Protection

The project site is within the San Bernardino County Fire Department (SBFD) jurisdiction because Fire Station No. 53, located at 65 Kingston Circle, Baker is the nearest station to the project. Station No. 53 has one Type 1 engine and a brush patrol vehicle. The station has three people on staff all the time including one captain, one engineer, and one firefighter who conduct 48-hour shifts. The nearest station that would come to the aid of Station No. 53 would be that from Clark County, Nevada. Station No. 53 has a mutual aid agreement with Clark County Fire Department. Station No. 53 will respond to a call from the site in approximately 45 minutes (Tellez, 2006).

### 5.10.3.6.3 Emergency Response

In San Bernardino County the County Fire Department is the Certified Unified Program Agency (CUPA). The response to emergency releases of hazardous material or waste is a combined County-wide effort between this Department and 20 other City and District departments who have all agreed to participate in what is called the San Bernardino County Inter-agency Hazardous Materials Response Team. The entire interagency team consists of roughly 150 members (10 Registered Environmental Health Specialists [REHS] and the rest firefighters) and is a full Level A response team, capable of handling all types of Chemical, Biological, Radiological, and Nuclear (CBRN) responses. The response time to an emergency call from the project site is approximately 3 to 4 hours (Ashbaker, 2007). However, Clark County Fire Hazmat Division would also respond to any hazardous material incident at the project site. The Clark County Fire HazMat team is a level II resource and is staffed with 8 on-call REHS personnel 24 hours a day. Their response time would be approximately 45 to 60 minutes to the project site (Brenner, 2007).

### 5.10.3.6.4 Hospitals

The closest hospital with an emergency room to the project site is the Saint Rose Hospital - Siena Campus in Henderson located at 3001 St. Rose Parkway. This facility is a 214-bed hospital and has over 2,600 employees. Approximately 1,142 physicians in the area have staffing privileges at Saint Rose. The facility is approximately 40 miles from the proposed project site. The emergency room at Saint Rose Hospital is designated as a Level II<sup>2</sup> trauma center that provides immediate, specialized care to accident victims and victims of sudden illness. Specialty services at the hospital include intensive care unit, emergency/trauma, labor and delivery, cardiac care, orthopedics, surgery, and transplant.

The other hospital with emergency rooms in close proximity to the project site is the University Medical Center Las Vegas (Tellez, 2007).

### 5.10.3.7 Utilities

This section describes utilities in the area.

#### 5.10.3.7.1 Electricity and Gas

Ivanpah 1, 2 and 3 will be interconnected to the SCE grid through updates to SCE's 115-kV line passing through the site on a northeast-southwest right-of-way. These updates will include the construction by SCE of a new 220/115-kV breaker-and-a-half substation between the Ivanpah 1 and 2 project sites. The existing 115-kV transmission line from the El Dorado substation will be replaced with a double-circuit 220-kV overhead line that will be looped into the new substation. Ivanpah 1, 2 and 3 power will be transmitted at 115 kV to the new substation where three new 115-kV lines will be added to increase capacity to the existing El Dorado-Baker-Cool Water-Dunn Siding-Mountain Pass 115-kV line heading southwest.

Approximately 5.3 miles of new 4- to 6-inch-diameter natural gas pipeline from the Kern River Gas Transmission line to Ivanpah 1 will be constructed. The gas line will connect to the Kern River line just north of the Ivanpah 3 boundary. The gas will be purchased through Southwest Gas Company or another purveyor. Regardless of who the purveyor is, the gas source and tie-in will be the same. Gas supply is described in Section 4.0.

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<sup>2</sup> Level II has 24-hour neuro/open heart/all other surgeries

#### **5.10.3.7.2 Water and Wastewater**

Potable water will come from treated groundwater using a package treatment plant. The water supply is described in Section 5.15, Water Resources.

Raw water will be drawn daily from one of two onsite wells, located east of Ivanpah 2. Each well will have sufficient capacity to supply water for all three phases. To save water in the site's desert environment, each plant will use a dry-cooling condenser. Water consumption is, therefore, minimal (estimated not to exceed 100 acre-feet/year for all three phases), mainly to provide water for washing the heliostats.

All wastewater is recycled in the system, except for a small stream of treated water that will be used for irrigation.

#### **5.10.3.7.3 Sewer**

The project includes a small package sewage system for wastewater streams, including showers and toilet. Sewage sludge is removed from the site by a sanitary service. A sewage package treatment plant will be located at the Administration/Warehouse building and at each power block.

### **5.10.4 Environmental Analysis**

This section assesses the potential environmental impacts of the project.

#### **5.10.4.1 Potential Environmental Impacts**

Local environmental impacts were determined by comparing project demands during construction and operation with the socioeconomic resources of the project area (i.e., San Bernardino County). A proposed solar electric generating system could impact employment, population, housing, public services and utilities, and/or schools. Impacts could be local and/or regional, though most impacts would tend to be more regional than local. Although it is anticipated that the project will not have any significant adverse impacts on the socioeconomic environment, it is expected to result in some socioeconomic benefits to the area.

#### **5.10.4.2 Significance Criteria**

The criteria used to determine the significance of project-related socioeconomic impacts are as suggested in the CEQA Checklist. Project-related impacts are determined to be significant if they:

- Induce substantial growth or concentration of population
- Displace a large number of people or existing housing
- Result in substantial adverse environmental impacts associated with the provision of utility services
- Result in substantial adverse physical impacts associated with the provision of public services

Other impacts may be significant if they cause substantial change in community interaction patterns, social organization, social structures, or social institutions; substantial conflict with

community attitudes, values, or perceptions; or substantial inequities in the distribution of project cost and benefit.

#### 5.10.4.3 Construction Impacts

Ivanpah SEGS construction will take place in three phases. As such, impacts will be evaluated separately for each of these phases. It is anticipated that the construction period for Ivanpah 1 will take place from the first quarter 2009 through the fourth quarter 2010. Mobilization will occur the first 2 months followed by site clearing and grubbing, which will take place over a 5-month period beginning the first quarters of 2009 and ending the third quarter. Actual construction will take place over approximately 15 months, from third quarter 2009 to the fourth quarter 2010. Plant testing is planned to commence in the fourth quarter of 2010 with commercial operation by the end of that quarter.

Site clearing and grubbing for Ivanpah 2 is also anticipated to occur over a 5-month period during the first to third quarters of 2010. Actual construction would take place over approximately 15 months, from third quarter 2010 to fourth quarter 2011. Plant testing is planned to commence in the fourth quarter of 2011 with commercial operation by the end of that quarter.

Site clearing and grubbing for Ivanpah 3 is also anticipated to occur over a 5-month period during the first to third quarters of 2011. Actual construction would take place over approximately 15 months, from third quarter 2011 to fourth quarter 2012. Plant testing is planned to commence in the fourth quarter of 2012 with commercial operation by the end of that quarter.

##### 5.10.4.3.1 Construction Workforces

It is anticipated that most (95 percent) of the construction workforce will be drawn from Clark County, Nevada while the remaining (5 percent) will be drawn from San Bernardino County. The primary trades in demand will include pipefitters, electricians, construction managers, ironworkers, laborers, pre-assembly, carpenters, and unskilled labor. Tables 5.10-13, 5.10-14, and 5.10-15 provide estimates of construction personnel requirements for Ivanpah 1, 2 and 3, respectively. Total personnel requirements during construction of Ivanpah 1 will be approximately 6,654 person-months, or 555 person-years. Construction personnel requirements will peak at approximately 557 workers in month 16 of the construction period. For Ivanpah 2, the project will require approximately 6,584 person-months, or 549 person-years, with a peak of 557 workers in month 28. For Ivanpah 3 the project will require approximately 9,496 person-months, or 791 person-years, with a peak of 798 workers in month 40. When considering the overlap of all phases, the workforce will peak at 959 workers in month 32.

Available skilled labor in Riverside-San Bernardino-Ontario MSA was evaluated by surveying the Building and Trades Council (Table 5.10-16) and contacting CEDD (Table 5.10-17). Both sources show that the workforce in San Bernardino County will be adequate to fulfill San Bernardino's portion (5 percent) of Ivanpah SEGS's labor requirements for construction. Therefore, Ivanpah SEGS construction will not place an undue burden on the local workforce in San Bernardino County. Available skilled labor in the Las Vegas-Paradise

TABLE 5.10-13  
Ivanpah 1 Plant Construction Personnel by Discipline

Job Category	Months After Notice to Proceed																								Totals	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Power Block, Towers, Transmission Lines & Water Line																										
Boilermakers															22	22	22	22	22	14	8					132
Carpenters					6	6	18	29	40	40	40	40	40	40	28	28	6	6	6	6	6	6	6	6		403
Constr. Equip. Operators			42	42	42	36	36																			198
Electricians	2	2	2	2	2	2	19	35	35	35	13	13	17	19	35	85	85	85	85	85	85	35	2	2		782
Ironworkers						6	12	11	17	44	44	44	44	44	46	41	7	7	7	3	3					380
Insulation Workers																	12	12	22	22	22	22	22	10		144
Laborers	8	8	25	25	25	25	32	19	23	23	23	23	23	23	19	19	10	10	10	10	10	10	10	10		423
Linemen										20	20	20	20	20	20											120
Millwrights															10	14	14	14	14	9	9	4				88
Operating Engineers	2	2	3	3	3	3	7	12	15	25	21	21	21	21	27	23	17	17	17	15	9	3	3	3		293
Painters																			4	8	10	10	6			38
Pipefitters							15	29	29	15	9	9	27	50	88	147	147	147	147	147	108	66				1,180
Teamsters	1	1	5	5	5	5	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		61
Craft Subtotal	13	13	77	77	83	83	144	137	161	204	172	172	194	219	297	381	322	322	336	321	272	158	51	33		4,242
Heliostat Erection																										
Base pre-casting								24	24	24	24	24	24	24	24	24	24	24	24	24						312
Pre-Assembly								32	32	32	32	32	32	32	32	32	32	32	32	32						416
Transport and erection								10	10	10	10	10	10	10	10	10	10	10	10	10						130
Base trenching								6	6	6	6	6	6	6	6	6	6	6	6	6						78
Backfill								2	2	2	2	2	2	2	2	2	2	2	2	2						26
Compaction								2	2	2	2	2	2	2	2	2	2	2	2	2						26
Electricians												10	10	10	10	10	10	10	10							90
Unskilled Labor								30	30	30	30	30	30	30	30	30	30	30	30							390
Heliostat Subtotal	0	0	0	0	0	0	0	106	106	106	106	116	116	116	116	116	116	116	116	116	0	0	0	0		1,468



TABLE 5.10-13  
Ivanpah 1 Plant Construction Personnel by Discipline

Job Category	Months After Notice to Proceed																								Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Construction Mgmt.								40	40	40	40	40	40	40	40	40	40	40	40	40	40				600
Foremen								20	20	20	20	20	20	20	20	20	20	20	20	20	20				300
Staff Subtotal	0	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	0	0	900
<b>TOTAL PLANT STAFF</b>	<b>13</b>	<b>13</b>	<b>77</b>	<b>77</b>	<b>83</b>	<b>83</b>	<b>144</b>	<b>303</b>	<b>327</b>	<b>370</b>	<b>338</b>	<b>348</b>	<b>370</b>	<b>395</b>	<b>473</b>	<b>557</b>	<b>498</b>	<b>498</b>	<b>512</b>	<b>497</b>	<b>332</b>	<b>218</b>	<b>51</b>	<b>33</b>	<b>6,610</b>
<b>Natural Gas Pipeline</b>																									
Laborers							6	6																	12
Operating Engineers							2	2																	4
Pipefitters							12	12																	24
Surveyors							2																		2
Teamsters							1	1																	2
<b>TOTAL GAS PIPELINE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>44</b>
<b>TOTAL WORKFORCE</b>	<b>13</b>	<b>13</b>	<b>77</b>	<b>77</b>	<b>83</b>	<b>83</b>	<b>167</b>	<b>324</b>	<b>327</b>	<b>370</b>	<b>338</b>	<b>348</b>	<b>370</b>	<b>395</b>	<b>473</b>	<b>557</b>	<b>498</b>	<b>498</b>	<b>512</b>	<b>497</b>	<b>332</b>	<b>218</b>	<b>51</b>	<b>33</b>	<b>6,654</b>
<b>TOTAL ALL PHASES</b>	<b>13</b>	<b>13</b>	<b>77</b>	<b>77</b>	<b>83</b>	<b>83</b>	<b>167</b>	<b>324</b>	<b>327</b>	<b>370</b>	<b>338</b>	<b>348</b>	<b>370</b>	<b>395</b>	<b>550</b>	<b>634</b>	<b>581</b>	<b>581</b>	<b>656</b>	<b>800</b>	<b>659</b>	<b>588</b>	<b>389</b>	<b>381</b>	<b>6,654</b>

TABLE 5.10-14  
Ivanpah 2 Plant Construction Personnel by Discipline

Job Category	Months After Notice to Proceed																							
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	Totals	
Power Block, Towers, Transmission, Gas & Water Lines																								
Boilermakers													22	22	22	22	22	14	8					132
Carpenters			6	6	18	29	40	40	40	40	40	40	28	28	6	6	6	6	6	6	6	6	6	403
Constr. Equip. Operators	42	42	42	36	36																			198
Electricians	2	2	2	2	19	35	35	35	13	13	17	19	35	85	85	85	85	85	85	35	2	2		778
Ironworkers				6	12	11	17	44	44	44	44	64	66	41	7	7	7	3	3					420
Insulation Wkrs															12	12	22	22	22	22	22	10	144	
Laborers	25	25	25	25	32	19	23	23	23	23	23	23	19	19	10	10	10	10	10	10	10	10	407	
Linemen								20	20	20	20												80	
Millwrights													10	14	14	14	14	9	9	4			88	
Operating Engineers	3	3	3	3	7	12	15	25	21	21	21	21	27	23	17	17	17	15	9	3	3	3	289	
Painters																	4	8	10	10	6		38	
Pipefitters					15	29	29	15	9	9	27	50	88	147	147	147	147	147	108	66			1,180	
Teamsters	5	5	5	5	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	59	
Craft Subtotal	77	77	83	83	144	137	161	204	172	172	194	219	297	381	322	322	336	321	272	158	51	33	4,216	
Heliostat Erection																								
Base pre-casting						24	24	24	24	24	24	24	24	24	24	24	24						312	
Pre-Assembly						32	32	32	32	32	32	32	32	32	32	32	32						416	
Transport and erection						10	10	10	10	10	10	10	10	10	10	10	10						130	
Base trenching						6	6	6	6	6	6	6	6	6	6	6	6						78	
Backfill						2	2	2	2	2	2	2	2	2	2	2	2						26	
Compaction						2	2	2	2	2	2	2	2	2	2	2	2						26	

TABLE 5.10-14  
Ivanpah 2 Plant Construction Personnel by Discipline

Job Category	Months After Notice to Proceed																						Totals
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
Electricians										10	10	10	10	10	10	10	10	10					90
Unskilled Labor						30	30	30	30	30	30	30	30	30	30	30	30	30					390
<b>Heliostat Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>106</b>	<b>106</b>	<b>106</b>	<b>106</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>116</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,468</b>
Construction Management						40	40	40	40	40	40	40	40	40	40	40	40	40	40	40			600
Foremen						20	20	20	20	20	20	20	20	20	20	20	20	20	20	20			300
<b>Staff Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>900</b>
<b>TOTAL PLANT STAFF</b>	<b>77</b>	<b>77</b>	<b>83</b>	<b>83</b>	<b>144</b>	<b>303</b>	<b>327</b>	<b>370</b>	<b>338</b>	<b>348</b>	<b>370</b>	<b>395</b>	<b>473</b>	<b>557</b>	<b>498</b>	<b>498</b>	<b>512</b>	<b>497</b>	<b>332</b>	<b>218</b>	<b>51</b>	<b>33</b>	<b>6,584</b>
<b>TOTAL ALL PHASES</b>	<b>550</b>	<b>634</b>	<b>561</b>	<b>581</b>	<b>656</b>	<b>800</b>	<b>659</b>	<b>588</b>	<b>389</b>	<b>381</b>	<b>370</b>	<b>395</b>	<b>575</b>	<b>659</b>	<b>608</b>	<b>608</b>	<b>701</b>	<b>959</b>	<b>825</b>	<b>767</b>	<b>557</b>	<b>559</b>	

TABLE 5.10-15  
Ivanpah 3 Plant Construction Personnel by Discipline

Job Category	Months After Notice to Proceed																							
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	Totals	
Power Block, Towers, Transmission, Gas & Water Lines																								
Boilermakers													29	29	29	29	29	18	10					173
Carpenters			8	8	23	38	52	52	52	52	52	52	36	36	8	8	8	8	8	8	8	8		525
Constr. Equip. Operators	55	55	55	47	47																			259
Electricians	3	3	3	3	25	46	46	46	17	17	22	25	46	111	111	111	111	111	111	46	3	3		1,020
Ironworkers				8	16	14	22	83	83	43	43	43	46	53	9	9	9	4	4					569
Insulation Workers															16	16	29	29	29	29	29	13		190
Laborers	33	33	33	33	42	25	30	30	30	30	30	30	25	25	13	13	13	13	13	13	13	13		533
Linemen										20	20	20	20											80
Millwrights													13	18	18	18	18	12	12	5				114
Operating Engineers	4	4	4	4	9	16	20	33	27	27	27	27	35	30	22	22	22	20	12	4	4	4		377
Painters																	5	10	13	13	8			49
Pipefitters					20	38	38	20	12	12	35	65	114	191	191	191	191	191	140	86				1,535
Teamsters	7	7	7	7	7	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		86
Craft Subtotal	102	102	110	110	189	180	211	267	224	224	252	285	387	496	420	420	438	419	355	207	68	44		5,510
Heliostat Erection																								
Base pre-casting						48	48	48	48	48	48	48	48	48	48	48	48							624
Pre-Assembly						64	64	64	64	64	64	64	64	64	64	64	64							832
Transport and erection						20	20	20	20	20	20	20	20	20	20	20	20							260
Base trenching						12	12	12	12	12	12	12	12	12	12	12	12							156
Backfill						4	4	4	4	4	4	4	4	4	4	4	4							52
Compaction						4	4	4	4	4	4	4	4	4	4	4	4							52

TABLE 5.10-15  
Ivanpah 3 Plant Construction Personnel by Discipline

Job Category	Months After Notice to Proceed																						
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	Totals
Electricians										20	20	20	20	20	20	20	20	20					180
Unskilled Labor						60	60	60	60	60	60	60	60	60	60	60	60	60					780
<b>Heliostat Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>212</b>	<b>212</b>	<b>212</b>	<b>212</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>232</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,936</b>
Construction Management						45	45	45	45	45	45	45	45	45	45	45	45	45	45	45			675
Foremen						25	25	25	25	25	25	25	25	25	25	25	25	25	25	25			375
Staff Subtotal	0	0	0	0	0	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	0	0	1,050
<b>TOTAL PLANT STAFF</b>	<b>102</b>	<b>102</b>	<b>110</b>	<b>110</b>	<b>189</b>	<b>462</b>	<b>493</b>	<b>549</b>	<b>506</b>	<b>526</b>	<b>554</b>	<b>587</b>	<b>689</b>	<b>798</b>	<b>722</b>	<b>722</b>	<b>740</b>	<b>721</b>	<b>425</b>	<b>277</b>	<b>68</b>	<b>44</b>	<b>9,496</b>
<b>TOTAL ALL PHASES</b>	<b>575</b>	<b>659</b>	<b>608</b>	<b>608</b>	<b>701</b>	<b>959</b>	<b>825</b>	<b>767</b>	<b>557</b>	<b>559</b>	<b>554</b>	<b>587</b>	<b>689</b>	<b>798</b>	<b>722</b>	<b>722</b>	<b>740</b>	<b>721</b>	<b>425</b>	<b>277</b>	<b>68</b>	<b>44</b>	<b>22,734</b>

**TABLE 5.10-16**  
Labor Union Contacts

<b>Labor Union</b>	<b>Contact</b>	<b>Phone Number</b>
San Bernardino, Riverside Building Trades Council	William Perez	(951) 684-1040

**TABLE 5.10-17**  
Available Labor by Skill in Riverside-San Bernardino-Ontario MSA, 2004 to 2014

<b>Occupational Title</b>	<b>Annual Averages</b>		<b>Absolute Change</b>	<b>Percentage Change</b>	<b>Average Annual Compounded Growth Rate (%)</b>
	<b>2004</b>	<b>2014</b>			
Millwrights	120	150	30	25	2.3
Carpenters	28,050	37,500	9,450	33.7	2.9
Cement Masons and Concrete Finishers	5,170	6,950	1,780	34.4	3.0
Painters, Construction and Maintenance	7,570	9,410	1,840	24.3	2.2
Sheet Metal Workers	2,930	3,480	550	18.8	1.7
Electricians	6,730	7,860	1,130	16.8	1.6
Welders, Cutters, Solderers, and Brazers	3,950	4,420	470	11.9	1.1
Industrial Truck and Tractor Operators	9,160	12,210	3,050	33.3	2.9
Operating Engineers and other Construction Equipment Operators	3,980	5,170	1,190	29.9	2.7
Helpers, Construction Trades	4,040	5,350	1,310	32.4	2.8
Construction Laborers	20,010	25,290	5,280	26.34	2.4
Plumbers, Pipefitters, and Steamfitters	4,660	5,650	990	21.2	1.9
Administrative Services Managers	1,480	1,880	400	27	2.4
Mechanical Engineers	1,150	1,390	240	20.9	1.9
Electrical Engineers	470	650	180	38.3	3.3
Engineering Technicians	3,140	4,150	1,010	32.2	2.8
Plant and System Operators	1,810	2,150	340	18.8	1.7

Source: CEDD, 2007c.

MSA was determined by evaluating occupational projections (Table 5.10-18). The occupational projections for Las Vegas-Paradise MSA indicate that there will be adequate skilled workforce to meet Ivanpah SEGS' labor requirements for construction within Clark County. In addition, as shown in Tables 5.10-7 and 5.10-8, the construction workforce has been growing at average annual rate of 8.4 percent per year within the Riverside-San

Bernardino-Ontario MSA and 8.9 percent per year within Las Vegas-Paradise MSA. Therefore, Ivanpah SEGS would not result in a significant construction impact.

TABLE 5.10-18  
Available Labor by Skill in Las Vegas-Paradise MSA, 2004 to 2014

Occupational Title	Projected Employment (2004-2014)
Millwrights	NA
Carpenters	26,378
Cement Masons and Concrete Finishers	3,624
Painters, Construction and Maintenance	6,547
Sheet Metal Workers	1,799
Electricians	9,678
Welders, Cutters, Solderers, and Brazers	875
Industrial Truck and Tractor Operators	2,785
Operating Engineers and other Construction Equipment Operators	4,046
Helpers, Construction Trades	12,152
Construction Laborers	11,150
Plumbers, Pipefitters, and Steamfitters	7,449
Administrative Services Managers	796
Mechanical Engineers	540
Electrical Engineers	527
Engineering Technicians	2,741
Plant and System Operators	707

Source: NDETR, 2007c

#### 5.10.4.3.2 Population Impacts

Most workers are expected to commute to the Ivanpah SEGS site from either Las Vegas or from communities in eastern San Bernardino County. Therefore, project construction will not contribute to an increase in the population of the area.

#### 5.10.4.3.3 Housing Impacts

Most of the construction workforce will have to commute to the project site daily since accommodations are limited at the project site. Primm, Nevada is located approximately 4.5 miles from the project site and could provide some accommodations. Additionally, there are over 2,600 hotel/motel rooms located in the vicinity. Some of these facilities could potentially accommodate California workers who choose to commute to the project site on a workweek basis.

#### 5.10.4.3.4 Impacts to the Local Economy and Employment

##### *Ivanpah 1*

The total cost of Ivanpah 1 of the project is estimated at \$300 million (in 2007 dollars). The estimated value of materials and supplies that will be purchased locally during construction is \$21 million. Of this amount, \$19.95 million (95 percent) would be spent in Clark County while the remaining \$1.05 million (5 percent) would be spent within San Bernardino County.

Ivanpah 1 will provide about \$57.7 million (in 2007 dollars) in construction payroll, at an average salary of \$50 per hour (including benefits). The anticipated payroll for employees, as well as the purchase of materials and supplies during the construction period, will have a slight but temporary beneficial impact on the economies of San Bernardino and Clark counties. Assuming that 5 percent of the construction workforce will reside in San Bernardino County, it is expected that approximately \$2.9 million will stay in San Bernardino County. Assuming, that 95 percent of the construction workforce will reside in Clark County, it is expected that approximately \$54.8 million will stay in Clark County (mainly the Las Vegas area). These additional funds will cause a temporary beneficial impact by creating the potential for other employment opportunities for local workers in other service areas, such as transportation and retail.

##### *Indirect and Induced Economic Impacts from Construction*

Construction activity associated with Ivanpah 1 would result in secondary economic impacts (indirect and induced impacts) within San Bernardino County. Secondary employment effects would include indirect and induced employment due to the purchase of goods and services by firms involved with construction, and induced employment due to construction workers spending their income within the county. In addition to these secondary employment impacts, there are indirect and induced income effects arising from construction.

Indirect and induced impacts were estimated using an IMPLAN Input-Output model of San Bernardino County. IMPLAN is an economic modeling software program. The estimated Ivanpah 1 indirect and induced employment within San Bernardino County would be 9 and 13 jobs, respectively. These additional jobs result from the \$525,000<sup>3</sup> in local construction expenditures as well as approximately \$1,009,190 in spending by local construction workers. The \$1,009,190 represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$1,441,700). Assuming an average direct construction employment of 14, the employment multiplier associated with the construction of Ivanpah 1 is approximately 2.5 (i.e.,  $(14 + 9 + 13)/14$ ). This project construction employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$291,860 and \$405,330, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$1,966,700 (\$1,441,700 in payroll + \$525,000 in materials and supplies), the project construction income multiplier based on a Type SAM model is approximately 1.4 (i.e.,  $[\$1,966,700 + \$291,860 + \$405,330]/\$1,966,700$ ).

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<sup>3</sup> The \$525,000 is the annual portion of the total local construction expenditures (\$10.5 million) that is assumed to remain in San Bernardino County. Annual portion of total expenditures = \$21 million x (24 months/12 months) = \$10.5 million. Since 5 percent of the construction expenditures are assumed to be from San Bernardino County, the annual construction expenditures within San Bernardino County = \$10,500,000 x 0.05 = \$525,000.



Indirect and induced impacts were estimated using an IMPLAN Input-Output model of Clark County. The estimated Ivanpah 1 indirect and induced employment within Clark County would be 123 and 160 jobs, respectively. These additional jobs result from the \$9.98<sup>4</sup> million in local construction expenditures as well as approximately \$19.2 million in spending by local construction workers. The \$19.2 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$27.4 million). Assuming an average direct construction employment of 264, the employment multiplier associated with the construction phase of the project is approximately 2.1 (i.e.,  $(264 + 123 + 160)/264$ ). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$4,849,840 and \$6,296,530, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$37.37 million (\$27.4 million in payroll + \$9.98 million in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.3 (i.e.,  $[\$37,367,300 + \$4,849,840 + \$6,296,530]/\$37,367,300$ ).

### *Ivanpah 2*

The total cost of Ivanpah 2 of the project is estimated at \$280 million (in 2007 dollars). The estimated value of materials and supplies that will be purchased locally during construction is \$19.6 million. Of this amount, \$18.62 million (95 percent) would be spent in Clark County while the remaining \$980,000 (5 percent) would be spent within San Bernardino County.

Ivanpah 2 will provide about \$57.1 million (in 2007 dollars) in construction payroll, at an average salary of \$50 per hour (including benefits). The anticipated payroll for employees, as well as the purchase of materials and supplies during the construction period, will have a slight but temporary beneficial impact on the economies of San Bernardino and Clark Counties. Assuming, conservatively, that 5 percent of the construction workforce will reside in San Bernardino County, it is expected that approximately \$2.9 million will stay in San Bernardino County. Assuming, that 95 percent of the construction workforce will reside in Clark County, it is expected that approximately \$54.8 million will stay in the Clark County (mainly in the Las Vegas area). These additional funds will cause a temporary beneficial impact by creating the potential for other employment opportunities for local workers in other service areas, such as transportation and retail.

### *Indirect and Induced Economic Impacts from Construction*

The estimated indirect and induced employment within San Bernardino County from Ivanpah 2 would be 9 and 14 jobs, respectively. These additional jobs result from the \$534,545<sup>5</sup> in local construction expenditures as well as approximately \$1,089,350 in spending by local construction workers. The \$1,089,350 represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$1,556,218). Assuming an average direct construction employment of 15, the employment multiplier associated with

<sup>4</sup> The \$9.98 million is the annual portion of the total local construction expenditures (\$10.5 million) that is assumed to be spent in Clark County. Annual portion of total expenditures = \$21 million x (24 months/12 months) = \$10.5 million. Since 95 percent of the construction expenditures are assumed to be from Clark County, the annual construction expenditures within Clark County = \$10,500,000 x 0.95 = \$9,975,000.

<sup>5</sup> The \$534,545 is the annual portion of the total local construction expenditures (\$10.69 million) that is assumed to remain in San Bernardino County. Annual portion of total expenditures = \$19.6 million x (22 months/12 months) = \$10.69 million. Since 5 percent of the construction expenditures are assumed to be from San Bernardino County, the annual construction expenditures within San Bernardino County = \$10,690,900 x 0.05 = \$534,545.

the construction phase of the project is approximately 2.5 (i.e.,  $(15 + 9 + 14)/15$ ). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$297,168 and \$433,296, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$2.09 million (\$1.56 million in payroll + \$534,545 in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.4 (i.e.,  $[\$2,090,764 + \$297,168 + \$433,296]/\$2,090,764$ ).

The Ivanpah 2 indirect and induced employment within Clark County is estimated to be 125 and 171 jobs, respectively. These additional jobs result from the \$10.16<sup>6</sup> million in local construction expenditures as well as approximately \$20.7 million in spending by local construction workers. The \$20.7 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$29.6 million). Assuming an average direct construction employment of 284, the employment multiplier associated with the construction phase of the project is approximately 2.0 (i.e.,  $(284 + 125 + 171)/264$ ). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$4,938,020 and \$6,736,820, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$39.7 million (\$29.6 million in payroll + \$10.2 million in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.3 (i.e.,  $[\$39,724,510 + \$4,938,020 + \$6,736,820]/\$39,724,510$ ).

### ***Ivanpah 3***

The total cost of Ivanpah 3 is estimated at \$520 million (in 2007 dollars). The estimated value of materials and supplies that will be purchased locally during construction is \$36.4 million. Of this amount, \$34.58 million (95 percent) would be spent in Clark County while the remaining \$1.82 million (5 percent) would be spent within San Bernardino County.

Ivanpah 3 will provide about \$82.3 million (in 2007 dollars) in construction payroll, at an average salary of \$50 per hour (including benefits). The anticipated payroll for employees, as well as the purchase of materials and supplies during the construction period, will have a slight but temporary beneficial impact on the economies of San Bernardino and Clark Counties. Assuming, conservatively, that 5 percent of the construction workforce will reside in San Bernardino County, it is expected that approximately \$4.1 million will stay in San Bernardino County. Assuming that 95 percent of the construction workforce will reside in Clark County, it is expected that approximately \$78.2 million will stay in Clark County (mainly the Las Vegas area). These additional funds will cause a temporary beneficial impact by creating the potential for other employment opportunities for local workers in other service areas, such as transportation and retail.

### ***Indirect and Induced Economic Impacts from Construction***

The estimated indirect and induced employment within San Bernardino County for Ivanpah 3 would be 17 and 21 jobs, respectively. These additional jobs result from the

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<sup>6</sup> The \$10.16 million is the annual portion of the total local construction expenditures (\$10.69 million) that is assumed to be spent in Clark County. Annual portion of total expenditures =  $\$19.6 \text{ million} \times (24 \text{ months}/12 \text{ months}) = \$10.69 \text{ million}$ . Since 95 percent of the construction expenditures are assumed to be from Clark County, the annual construction expenditures within Clark County =  $\$10,690,900 \times 0.95 = \$10,156,360$ .

\$992,730<sup>7</sup> in local construction expenditures as well as approximately \$1.57 million in spending by local construction workers. The \$1.57 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$2.24 million). Assuming an average direct construction employment of 22, the employment multiplier associated with the construction phase of the project is approximately 2.7 (i.e.,  $(22 + 17 + 21)/22$ ). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$551,880 and \$654,080, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$3.24 million (\$2.24 million in payroll + \$992,730 million in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.4 (i.e.,  $[\$3,237,240 + \$551,880 + \$654,080]/\$3,237,240$ ).

The estimated indirect and induced employment within Clark County from Ivanpah 3 would be 233 and 257 jobs, respectively. These additional jobs result from the \$18.86<sup>8</sup> million in local construction expenditures as well as approximately \$29.9 million in spending by local construction workers. The \$29.9 million represents the disposable portion of the annual construction payroll (here assumed to be 70 percent of \$42.65 million). Assuming an average direct construction employment of 409, the employment multiplier associated with the construction phase of the project is approximately 2.2 (i.e.,  $(409 + 233 + 257)/409$ ). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$9,170,600 and \$10,129,250, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$61.5 million (\$42.65 million in payroll + \$18.86 million in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.3 (i.e.,  $[\$61,507,490 + \$9,170,600 + \$10,129,250]/\$61,507,490$ ).

#### 5.10.4.3.5 Fiscal Impacts

##### *Ivanpah 1*

Ivanpah 1's capital cost is estimated to be \$300 million (in 2007 dollars). The estimated value of materials and supplies that will be purchased locally during construction of Ivanpah 1 is \$21 million. Of this amount, \$19.95 million (95 percent) would be spent in Clark County while the remaining \$1.05 million (5 percent) would be spent within San Bernardino County. The effect on fiscal resources during construction will be from sales taxes realized on equipment and materials purchased in the County and from sales taxes from expenditures. The sales tax rate in San Bernardino County is 7.75 percent (as of April 1, 2007). Of this, 6.25 percent goes to the state; one percent goes to the place of sale; and 0.5 percent goes to the special districts (BOE, 2007). The total local sales tax expected to be generated within San Bernardino County during the 2-year construction period is \$81,375 (i.e., 7.75 percent of local sales). The sales tax in Clark County (Nevada) is also 7.75 percent

<sup>7</sup> The \$992,730 is the annual portion of the total local construction expenditures (\$19.85 million) that is assumed to remain in San Bernardino County. Annual portion of total expenditures =  $\$36.4 \text{ million} \times (22 \text{ months}/12 \text{ months}) = \$19.85 \text{ million}$ . Since 5 percent of the construction expenditures are assumed to be from San Bernardino County, the annual construction expenditures within San Bernardino County =  $\$19,854,545 \times 0.05 = \$992,727$ .

<sup>8</sup> The \$18.86 million is the annual portion of the total local construction expenditures (\$19.85 million) that is assumed to be spent in Clark County. Annual portion of total expenditures =  $\$36.4 \text{ million} \times (24 \text{ months}/12 \text{ months}) = \$19.85 \text{ million}$ . Since 95 percent of the construction expenditures are assumed to be from Clark County, the annual construction expenditures within Clark County =  $\$19,854,545 \times 0.95 = \$18,861,818$ .

(NDT, 2007). The total local sales tax expected to be generated with Clark County during the 2-year construction period is \$1,546,125.

### *Ivanpah 2*

Ivanpah 2 capital cost is estimated to be \$280 million (in 2007 dollars). The estimated value of materials and supplies that will be purchased locally during construction of Ivanpah 2 will be approximately \$19.6 million. Of this amount, \$18.62 million (95 percent) would be spent in Clark County while the remaining \$980,000 (5 percent) would be spent within San Bernardino County. The total local sales tax expected to be generated within San Bernardino County during the 22-month construction period is \$75,950 (i.e., 7.75 percent of local sales). The total local sales tax expected to be generated with Clark County during the 22-month construction period is \$1,443,050.

### *Ivanpah 3*

Ivanpah 3's capital cost is estimated to be \$520 million (in 2007 dollars). The estimated value of materials and supplies that will be purchased locally during construction of Ivanpah 3 is between \$36.4 million. Of this amount, \$34.58 million (95 percent) would be spent in Clark County while the remaining \$1.82 million (5 percent) would be spent within San Bernardino County. The total local sales tax expected to be generated within San Bernardino County during 22-month construction period is \$141,050 (i.e., 7.75 percent of local sales). The total local sales tax expected to be generated with Clark County during the 22-month construction period is \$2,679,950.

#### 5.10.4.3.6 Summary of Economic Impacts from Construction

Table 5.10-19 provides a summary of the construction inputs to the IMPLAN model and other key factors used to assess potential construction impacts.

TABLE 5.10-19  
Summary of Total Economic Impacts from Construction (million \$)

	<b>Ivanpah 1</b>	<b>Ivanpah 2</b>	<b>Ivanpah 3</b>	<b>Total</b>
Capital Cost	\$300	\$280	\$520	\$1,100
Local Materials & Supply Purchases	\$21.0	\$19.6	\$36.4	\$77.0
Total Construction Payroll	\$57.7	\$57.1	\$82.3	\$197.0
Construction Payroll (Disposable)	\$40.4	\$39.9	\$57.6	\$137.9
Average Monthly Direct Construction Employment	277	299	432	474
Annual Local Construction Expenditures	\$10.50	\$10.69	\$19.85	\$41.0
Annual Average Local Construction Payroll (Disposable)	\$20.18	\$21.79	\$31.42	\$73.4
Total Sales Taxes	\$1.63	\$1.52	\$2.82	\$6.0
Annual Sales Taxes	\$0.81	\$0.83	\$1.54	\$3.2

Tables 5.10-20 and 21 summarize the economic impacts from construction by phase within San Bernardino and Clark counties, respectively.

**TABLE 5.10-20**  
Summary of Economic Impacts from Construction within San Bernardino County

	<b>Ivanpah 1</b>	<b>Ivanpah 2</b>	<b>Ivanpah 3</b>	<b>Total</b>
Local Materials & Supply Purchases	\$1,050,000	\$980,000	\$1,820,000	\$3,850,000
Total Worker Payroll	\$2,883,400	\$2,853,067	\$4,114,933	\$9,851,400
Worker Payroll (Disposable)	\$2,018,380	\$1,997,147	\$2,880,453	\$6,896,000
Indirect Employment	9	9	17	34
Induced Employment	13	14	21	47
Average Monthly Direct Construction Employment	14	15	22	51
Construction Employment Multiplier	2.5	2.5	2.7	NA
Annual Local Construction Expenditures	\$525,000	\$534,545	\$992,727	\$2,052,300
Annual Average Local Construction Payroll (Disposable)	\$1,009,190	\$1,089,353	\$1,571,156	\$3,669,700
Indirect Income	\$291,861	\$297,168	\$551,883	\$1,140,900
Induced Income	\$405,327	\$433,296	\$654,081	\$1,492,700
Construction Income Multiplier	1.4	1.3	1.4	NA
Total Sales Taxes	\$81,375	\$75,950	\$141,050	\$298,400
Annual Sales Taxes	\$40,688	\$41,427	\$76,936	\$159,100

**TABLE 5.10-21**  
Summary of Economic Impacts from Construction within Clark County

	<b>Phase 1</b>	<b>Phase 2</b>	<b>Phase 3</b>	<b>Total</b>
Local Materials & Supply Purchases	\$1,050,000	\$980,000	\$1,820,000	\$3,850,000
Total Worker Payroll	\$54,784,600	\$54,208,267	\$78,183,733	\$187,176,600
Worker Payroll (Disposable)	\$38,349,220	\$37,945,787	\$54,728,613	\$131,023,600
Indirect Employment	123	125	233	482
Induced Employment	160	171	257	588
Average Monthly Direct Construction Employment	264	284	409	957
Construction Employment Multiplier	2.1	2.0	2.2	NA
Annual Local Construction Expenditures	\$9,975,000	\$10,156,364	\$18,861,818	\$38,993,200
Annual Average Local Construction Payroll (Disposable)	\$19,174,610	\$20,697,702	\$29,851,971	\$69,724,300
Indirect Income	\$4,849,835	\$4,938,015	\$9,170,600	\$18,958,400
Induced Income	\$6,296,530	\$6,736,815	\$10,129,254	\$23,162,600
Construction Income Multiplier	1.3	1.3	1.3	NA
Total Sales Taxes	\$1,546,125	\$1,443,050	\$2,679,950	\$5,669,100
Annual Sales Taxes	\$773,063	\$787,118	\$1,461,791	\$3,022,000

#### **5.10.4.3.7 Impacts on Education**

The schools in the Baker Unified School District are not currently considered at capacity (DeLeon, 2007). If there are additional students, the school district will enroll them as required by law but there are currently no planned expansions or new constructions.

Construction of Ivanpah SEGS will not cause significant population changes to either San Bernardino or Clark counties. Most employees will commute to the site from areas within the two counties, as opposed to relocating to the area. As a result, Ivanpah SEGS construction will not cause any significant increase in demand for school services.

#### **5.10.4.3.8 Impacts on Public Services and Facilities**

The construction phases of the project may have minor impacts on police, fire, or hazardous materials handling resources. The Sheriff's department indicated that impacts during the construction phase of the project would be minimal (Clark, 2007). The Fire Department does not anticipate any significant impacts during the construction phase of the project (Crawford, 2007). Copies of the records of conversation with the Sheriff and Fire departments are included in Appendix 5.10A. Ivanpah SEGS construction is not expected to create significant adverse impacts on medical resources in the area because minor injuries could be treated at the Saint Rose Hospital in Henderson, Nevada or the University Medical Center Las Vegas. Both of these facilities have trauma centers.

#### **5.10.4.3.9 Impacts on Utilities**

Ivanpah SEGS construction will not make significant adverse demands on local water, sanitary sewer, electricity, or natural gas. Water requirements for construction are relatively minor. Given the number of workers and temporary duration of the construction period the impacts on the local sanitary sewer system (from emptying the "porta-potties") would not be significant.

#### **5.10.4.4 Operational Impacts**

Since the construction of the Ivanpah SEGS project will be by phases and each of these phases will become operational at different times, the impacts associated with the operation of the Ivanpah SEGS will be evaluated separately for each phase. Ivanpah 1 is expected to begin commercial operation by the end of the fourth quarter 2010. Ivanpah 2 is expected to begin commercial operation the end of the fourth quarter 2011 while Phase 3 is expected to begin commercial operation the end of the fourth quarter 2012.

##### **5.10.4.4.1 Operational Workforce**

Tables 5.10-22 through 5.10-24 show the anticipated job classifications for the operations workforce for each of the three Ivanpah SEGS plants. It is expected to employ up to 90 full-time employees: 35 with Ivanpah 1, 20 with Ivanpah 2, and 35 with Ivanpah 3. The entire permanent workforce is expected to commute from San Bernardino or Clark counties.

TABLE 5.10-22  
Ivanpah 1 Plant Operation Workforce

Department	Personnel	Shift
Operations	4 Operating Technicians, 1 Process and Performance	One operator on duty in common control room 12 hours a day.
Maintenance	1 Manager, 12 Mirror washers/unskilled, 2 Skilled, 8 Subcontractor personnel	12-hour night shift for maintenance
Administration	1 General Manager, 3 Administrative, 3 Security	

TABLE 5.10-23  
Ivanpah 2 Plant Operation Workforce

Department	Personnel	Shift
Operations	2 Operating Technicians	One operator on duty in common control room 12 hours a day.
Maintenance	7 Mirror washers/unskilled, 1 Skilled, 5 Subcontractor personnel	12-hour night shift for maintenance
Administration	2 Administrative, 2 Security	

TABLE 5.10-24  
Ivanpah 3 Plant Operation Workforce

Department	Personnel	Shift
Operations	4 Operating Technicians, 1 Process and Performance	One operator on duty in common control room 12 hours a day.
Maintenance	1 Manager, 12 Mirror washers/unskilled, 2 Skilled, 8 Subcontractor personnel	12-hour night shift for maintenance
Administration	1 General Manager, 3 Administrative, 3 Security	

Facility employees will be drawn from the local workforce and from existing Applicant staff. Consequently, only a slight increase in population is anticipated as a result of this project. There will be no significant impact on local employment.

#### 5.10.4.4.2 Population Impacts

Some of the operational workforce may be drawn from the local population. However, it is anticipated that most of the operational workforce will be drawn from the City of Las Vegas in Clark County as well as parts of surrounding rural areas in San Bernardino County. Assuming that all 90 of the O&M workers reside in San Bernardino County, the expected increase in population would be very negligible (0.004 percent). If all 90 workers reside in

Las Vegas, the anticipated increase in that city's population would also be negligible (0.005 percent). As such, the project is not likely to result in population impacts.

#### 5.10.4.4.3 Housing Impacts

Due to the few operations staff, significant impacts to housing are not anticipated. Based on the housing vacancy data in Table 5.10-6, there are about 10,000 housing units available in Las Vegas and about 32,600 housing units in Clark County. Based on the same information (Table 5.10-6), there are about 77,400 housing units within San Bernardino County. Thus, some employees who need to relocate could choose to live within San Bernardino or Clark counties. Some may even want to have a new home built. However, the additional demand for housing would not be significant.

#### 5.10.4.4.4 Impacts to the Local Economy and Employment

##### *Ivanpah 1*

Operation of Ivanpah 1 will generate a small, permanent beneficial impact by creating employment opportunities for local workers through local expenditures for materials, such as office supplies and services. Ivanpah 1 will provide about \$2.1 million (in 2007 dollars) in operational payroll, at an average salary of \$60,000 per year (including benefits) for the assumed 35 full-time employees. There will be an annual operations and maintenance budget of approximately \$0.2 million (in 2007 dollars), 5 percent of which is assumed to be spent within San Bernardino County while the remaining 95 percent is assumed to be spent within Clark County. These additional jobs and spending will generate other employment opportunities and spending in San Bernardino and Clark counties. However, the addition of 35 (2 in San Bernardino County and 33 in Clark County) full-time jobs would not significantly reduce unemployment rates.

**Indirect and Induced Economic Impacts from Operation.** Operation of Ivanpah 1 would result in indirect and induced economic impacts that would occur within San Bernardino and/or Clark counties depending on the point of sale. These indirect and induced impacts represent permanent increases in the county's economic variables. The indirect and induced impacts would result from annual expenditures for payroll as well as those on operations and maintenance (O&M) and were estimated using two separate IMPLAN Input-Output models of the two counties.

The estimated Ivanpah 1 indirect and induced employment within San Bernardino County would be 0 and 1 permanent jobs, respectively. This additional one job results from the \$115,500 (\$105,000 in payroll, and \$10,500 in operations and maintenance) in annual operational budget. The operational phase employment multiplier is estimated at 1.5 (i.e.,  $[2 + 0 + 1]/2$ ) and is based on a Type SAM multiplier.

Indirect and induced income impacts are estimated at \$14,870 and \$28,020, respectively. The income multiplier associated with the operational phase of the project is approximately 1.4 (i.e.,  $[\$115,500 + \$14,870 + \$28,020]/\$115,500$ ) and is based on a Type SAM model.

The Phase 1 estimated indirect and induced impacts within Clark County would be 1 and 10 permanent jobs, respectively. These additional 11 jobs result from the \$2,194,500 (\$1,995,000 in payroll, \$199,500 in operations and maintenance) in annual operational budget. The operational phase employment multiplier is estimated at 1.2 (i.e.,  $[33 + 1 + 10]/33$ ) and is based on a Type SAM multiplier.



Indirect and induced income impacts are estimated at \$28,040 and \$399,220, respectively. The income multiplier associated with the operational phase of the project is approximately 1.2 (i.e.,  $[\$2,194,500 + \$28,040 + \$399,220] / \$2,194,500$ ) and is based on a Type SAM model.

### *Ivanpah 2*

Ivanpah SEGS Phase 2 operation will generate a small, permanent beneficial impact by creating employment opportunities for local workers through local expenditures for materials, such as office supplies and services. Ivanpah SEGS will provide about \$1.2 million (in 2007 dollars) in operational payroll, at an average salary of \$60,000 per year (including benefits) for the assumed 20 full-time employees. There will be an annual local operations and maintenance budget of approximately \$0.1 million (in 2007 dollars), 5 percent of which is assumed to be spent within San Bernardino County while the remaining 95 percent is assumed to be spent within Clark County. These additional jobs and spending will generate other employment opportunities and spending in San Bernardino and Clark counties. However, the addition of 20 (1 in San Bernardino County and 19 in Clark County) full-time jobs would not significantly reduce unemployment rates.

**Indirect and Induced Economic Impacts from Operation.** The Ivanpah 2 operation of the proposed project would result in indirect and induced economic impacts that would occur within San Bernardino and/or Clark County depending on the point of sale. These indirect and induced impacts represent permanent increases in the county's economic variables. The indirect and induced impacts would result from annual expenditures on payroll as well as those on O&M and were estimated using two separate IMPLAN Input-Output models of the two counties.

Since the expenditures associated with the operation of Ivanpah 2 (that are expected to stay in San Bernardino County) are so low, running an IMPLAN model to estimate the indirect and induced employment and income impacts was deemed unnecessary.

### *Ivanpah 3*

Operation of Ivanpah 3 will generate a small, permanent beneficial impact by creating employment opportunities for local workers through local expenditures for materials, such as office supplies and services. Ivanpah 3 will provide about \$2.1 million (in 2007 dollars) in operational payroll, at an average salary of \$60,000 per year (including benefits) for the assumed 35 full-time employees. There will be an annual local operations and maintenance budget of approximately \$0.2 million (in 2007 dollars), 5 percent of which is assumed to be spent within San Bernardino County while the remaining 95 percent is assumed to be spent within Clark County. These additional jobs and spending will generate other employment opportunities and spending in San Bernardino and Clark counties. However, the addition of 35 (2 in San Bernardino County and 33 in Clark County) full-time jobs would not significantly reduce unemployment rates.

### *Indirect and induced Economic Impacts from Operation*

The Phase 3 operation of the proposed project would result in indirect and induced economic impacts that would occur within San Bernardino and/or Clark County depending on the point of sale. These indirect and induced impacts represent permanent increases in the county's economic variables. The indirect and induced impacts would result from annual expenditures on payroll as well as those on O&M and were estimated using two separate IMPLAN Input-Output models of the two counties.

The estimated Ivanpah 1 indirect and induced employment within San Bernardino County would be 0 and 1 permanent jobs, respectively. This additional one job results from the \$115,500 (\$105,000 in payroll, and \$10,500 in operations and maintenance) in annual operational budget. The operational phase employment multiplier is estimated at 1.5 (i.e.,  $[2 + 0 + 1]/2$ ) and is based on a Type SAM multiplier.

Indirect and induced income impacts are estimated at \$14,870 and \$28,020, respectively. The income multiplier associated with the operational phase of the project is approximately 1.4 (i.e.,  $[\$115,500 + \$14,870 + \$28,020]/\$115,500$ ) and is based on a Type SAM model.

The Phase 1 estimated indirect and induced impacts within Clark County would be 1 and 10 permanent jobs, respectively. These additional 11 jobs result from the \$2,194,500 (\$1,995,000 in payroll, \$199,500 in operations and maintenance) in annual operational budget. The operational phase employment multiplier is estimated at 1.2 (i.e.,  $[33 + 1 + 10]/33$ ) and is based on a Type SAM multiplier.

Indirect and induced income impacts are estimated at \$28,040 and \$399,220, respectively. The income multiplier associated with the operational phase of the project is approximately 1.2 (i.e.,  $[\$2,194,500 + \$28,040 + \$399,220]/\$2,194,500$ ) and is based on a Type SAM model.

#### 5.10.4.4.5 Fiscal Impacts

##### *Property Taxes*

Ivanpah SEGS is expected to bring both sales tax and property tax revenue to San Bernardino County. The California State Board of Equalization (BOE) has jurisdiction over the valuation of a power-generating facility for property tax purposes if the power plant produces 80 MW or more from renewable energy sources such as solar (Reisinger, 2007). For a power plant using renewable energy sources to generate less than 80 MW of power, the County has jurisdiction over the valuation. Because the three Ivanpah plants each exceed 80 MW, the California BOE will be responsible for assessing its property value. However since the BOE has not evaluated alternative energy generating facilities thus far, it does not know what method it will use to evaluate the property value of these types of facilities. Under the current law with exemptions for portions of the plant, property taxes are estimated at approximately \$ 2.2 million per year. However this law is due to expire before the Ivanpah SEGS is commercial. The proposed AB 1451 (Leno bill) is expected to provide certain exemptions for solar power-generating facilities such as Ivanpah SEGS. In light of the uncertainties of pending legislation and BOE valuation methods, no estimate is offered at this time. Whatever the final estimate of the property tax value turns out to be, San Bernardino County will not realize any annual property tax revenue until construction of the first phase is completed. Once taxes are assessed, about 40 percent (or 39.66 percent) of the property tax would go to the schools, 31.74 percent would go to the Educational Revenue Augmentation Fund, 20.96 percent to County General Fund, 3.80 percent to Special Districts, 2.02 percent to County Library, and the remaining 1.78 percent would go to flood control (Wright, 2007). However much it turns out to be, it is anticipated that the additional property tax revenues generated by the Ivanpah SEGS project would have a *beneficial impact* to the County.

##### *Ivanpah 1*

The annual operations and maintenance budget is expected to be approximately \$210,000 (in 2007 dollars), of which \$10,500 is assumed would be spent locally within San Bernardino

County. As stated in the impacts to the economy subsection, Ivanpah SEGS will bring about \$105,000 in operational payroll to San Bernardino County.

During operations, additional sales tax revenues will be obtained by San Bernardino County. Increased payroll will be \$105,000 annually, and additional O&M expenses spent locally within San Bernardino will be approximately \$10,500 annually. Based on the assumed local O&M expenditures of \$10,500, the estimated sales taxes will be approximately \$814. Of this amount, the place of sale will receive approximately \$160 in sales tax revenue.

### ***Ivanpah 2***

The annual operations and maintenance budget is expected to be approximately \$120,000 (in 2007 dollars), of which \$6,000 is assumed would be spent locally within San Bernardino County. As stated in the impacts to the economy subsection, Ivanpah SEGS will bring about \$60,000 in operational payroll to San Bernardino County.

During operations, additional sales tax revenues will be obtained by San Bernardino County. Increased payroll will be \$60,000 annually, and additional O&M expenses spent locally within San Bernardino will be approximately \$66,000 annually. Based on the assumed local O&M expenditures of \$6,000, the estimated sales taxes will be approximately \$465. Of this amount, the place of sale will receive approximately \$90 in sales tax revenue.

### ***Ivanpah 3***

The annual operations and maintenance budget is expected to be approximately \$10,500 (in 2007 dollars), all of which is assumed would be spent locally within San Bernardino County. As stated in the impacts to the economy subsection, Ivanpah SEGS will bring about \$105,000 in operational payroll to San Bernardino County.

During operations, additional sales tax revenues will be obtained by San Bernardino County. Increased payroll will be \$105,000 annually, and additional O&M expenses spent locally within San Bernardino will be approximately \$10,500 annually. Based on the assumed local O&M expenditures of \$10,500, the estimated sales taxes will be approximately \$814. Of this amount, the place of sale will receive approximately \$160 in sales tax revenue.

#### **5.10.4.4.6 Summary of Economic Impacts from Operation**

Table 5.10-25 provides a summary of the operation inputs to the IMPLAN model and other key factors used to assess potential operation impacts.

**TABLE 5.10-25**  
Summary of Total Economic Impacts from Operations & Maintenance

	<b>Ivanpah 1</b>	<b>Ivanpah 2</b>	<b>Ivanpah 3</b>	<b>Total</b>
Total Annual O&M Purchases (\$Millions)	\$1.0	\$1.0	\$2.0	\$4.0
Annual Local O&M Purchases (\$Millions)	\$0.2	\$0.1	\$0.2	\$0.5
Total O&M Payroll (\$Millions)	\$2.1	\$1.2	\$2.1	\$5.4
Disposable O&M Payroll (\$Millions)	\$1.5	\$0.8	\$1.5	\$3.8
Average Monthly Direct O&M Employment	35	20	35	90

Tables 5.10-26 and 27 summarize the economic impacts from operation by phase within San Bernardino and Clark counties, respectively.

**TABLE 5.10-26**  
Summary of Economic Impacts from Operation within San Bernardino County

	<b>Ivanpah 1</b>	<b>Ivanpah 2</b>	<b>Ivanpah 3</b>	<b>Total</b>
Annual Local O&M Expenditures (\$Millions)	\$10,500	\$6,000	\$10,500	\$27,000
Annual O&M Payroll (\$Millions)	\$105,000	\$60,000	\$105,000	\$270,000
Annual Disposable O&M Payroll (\$Millions)	\$73,500	\$42,000	\$73,500	\$189,000
Indirect Employment	0	0	0	0
Induced Employment	1	0	1	2
Annual O&M Employment	2	1	2	5
O&M Employment Multiplier	1.5	1.0	1.5	NA
Indirect Income	\$14,870	\$1,070	\$14,870	\$30,810
Induced Income	\$28,020	\$14,260	\$28,020	\$17,300
Operation Phase Income Multiplier	1.4	1.2	1.4	NA
Total Annual Sales Taxes	\$810	\$470	\$810	\$2,090
Annual Sales Taxes (point-of-sale)	\$160	\$90	\$160	\$410

**TABLE 5.10-27**  
Summary of Economic Impacts from Operation within Clark County

	<b>Phase 1</b>	<b>Phase 2</b>	<b>Phase 3</b>	<b>Total</b>
Annual Local O&M Expenditures (\$Millions)	\$199,500	\$114,000	\$199,500	\$513,000
Annual O&M Payroll (\$Millions)	\$1,995,000	\$1,140,000	\$1,995,000	\$5,130,000
Annual Disposable O&M Payroll (\$Millions)	\$1,396,500	\$798,000	\$1,396,500	\$3,591,000
Indirect Employment	1	0	1	2
Induced Employment	10	6	10	26
Annual O&M Employment	33	19	33	86
O&M Employment Multiplier	1.3	1.3	1.3	NA
Indirect Income	\$28,040	\$16,020	\$28,040	\$72,100
Induced Income	\$299,220	\$228,120	\$299,220	\$1,026,560
O&M Phase Income Multiplier	1.2	1.2	1.2	NA

#### 5.10.4.4.7 Impacts on Education

The schools in the Baker Valley Unified School District are not currently at capacity (DeLeon, 2007). Assuming that 95 percent of the 90 operational employees end up residing within Clark County, Nevada, the Ivanpah SEGS operation is not expected to create any

significant adverse impacts to the local school system. Assuming an average family size of 3.3 persons per household for San Bernardino County (DOF, 2007b) would imply the addition of approximately 17 children to the local schools. This would constitute an 8 percent increase in school enrollment in the Baker Valley Unified School District. Although minor adverse impacts could occur, any development (industrial or residential) within the Baker Valley Unified School District boundaries is currently charged a one-time assessment fee of \$0.33 per square foot of principal building area (DeLeon, 2006). Based on 9,682 square feet of administration/storage (occupied structures), Ivanpah SEGS would pay \$3,195 in school impact fees as full mitigation for potential school impacts.

#### **5.10.4.4.8 Impacts on Public Services and Facilities**

Project operation will not make significant demands on public services or facilities. The Sheriff's department did not express any concerns about needing increased services during plant operations (Clark, 2007). Fire protection for the plant will be supplied by connection to a firewater storage tank. The Fire Department does not anticipate any impacts to its services during plant operations (Crawford, 2007). Copies of the records of conversation with the Sheriff and Fire departments are included in Appendix 5.10A. Ivanpah SEGS operation would not create significant adverse impacts on medical resources in the area due to the safety record of power plants and few operations staff.

#### **5.10.4.4.9 Impacts on Utilities**

Ivanpah SEGS operation will not make significant adverse demands on sanitary sewer, electricity or natural gas because the plant's requirements are small.

### **5.10.5 Cumulative Effects**

Because the majority of both construction and operations personnel will reside primarily in the Clark County, Nevada and live within commuting distance, no adverse effect to local schools or housing is anticipated. Although there are a number of projects that are currently under development in the vicinity of Ivanpah SEGS (see Section 5.6, Land Use) that could potentially have an adverse cumulative socioeconomic effect, most of these projects have not advanced to the point where enough is known about them in terms of construction workforce requirements or construction schedule. The only projects that have construction schedules available are the I-15 Improvements and the Southern Nevada Supplemental Airport (Ivanpah Valley Airport) projects. The construction on the I-15 Improvements is expected to be completed before the start of construction on Ivanpah 1. However, construction on the Southern Nevada Supplemental Airport (Ivanpah Valley Airport) project could start in 2010, thus overlapping with the construction of Ivanpah 1, 2, and 3. Despite the potential for construction schedule overlap with the Southern Nevada Supplemental Airport, no adverse cumulative socioeconomic effects are anticipated from either the construction or operation of Ivanpah SEGS because construction workforce will ramp up slowly and would allow for workers to complete construction work and move to this project. Instead, the Clark County will enjoy a beneficial (but not significant) impact from short-term construction and longer-term operations employment. In addition, the long-term payment of taxes and fees are expected to have a significant beneficial impact to the County.

For additional cumulative effects, the reader is referred to Section 5.6, Land Use.

### 5.10.6 Environmental Justice

President Clinton's Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations" was signed on February 11, 1994. The purpose of this Executive Order is to identify and address whether adverse human health or environmental effects are likely to fall disproportionately on minority and/or low-income members of the community.

The federal guidelines set forth a three-step screening process:

1. Identify which impacts of the project are high and adverse
2. Determine if minority or low-income populations exist within the high and adverse impact zones
3. Examine the spatial distribution of high and adverse impact areas to determine if these impacts are likely to fall disproportionately on the minority and/or low-income population

According to the guidelines established by EPA to assist federal agencies to develop strategies to address this circumstance, a minority and/or low-income population exists if the minority and/or low-income population percentage of the affected area is 50 percent or more of the area's general population. The guidance suggests using two or three standard deviations above the mean as a quantitative measure of disparate effects.

A screening-level analysis of Environmental Justice is presented in Appendix 5.10B. According to that analysis, this project does not create high and adverse impacts. Therefore, there are no environmental impacts that are likely to fall disproportionately on minority and/or low-income members of the community.

### 5.10.7 Mitigation Measures

1. The Applicant will pay the one-time statutory development fee for school impact fees.
2. The Applicant will provide onsite security and work with local law enforcement to address the need for any additional support during the construction phase.

### 5.10.8 Involved Agencies and Agency Contacts

Table 5.10-28 provides a list of agencies and contact persons of potentially responsible agencies. Copies of records of conversation are provided in Appendix 5.10A.

TABLE 5.10-28  
Agency Contacts for Ivanpah SEGS Socioeconomics

Issue	Agency	Contact
Property valuation	California Board of Equalization	Dick Reisinger Leader Electric Generation Facility Group California Board of Equalization (916) 324-2803

**TABLE 5.10-28**  
**Agency Contacts for Ivanpah SEGS Socioeconomics**

<b>Issue</b>	<b>Agency</b>	<b>Contact</b>
Available resources and potential impacts to resources	Clark County Fire Department	Richard Brenner Hazardous Material Coordinator 5575 East Flamingo Las Vegas, NV 89119 (702) 455-7311 rik@co.clark.nv.co
Assessing property valuation	San Bernardino County Assessor's Office	Eric Endler, Appraiser III 172 West 3 <sup>rd</sup> Street San Bernardino, CA 92415 (909) 387-6703 eendler@asr.sbcounty.gov
Availability of labor	San Bernardino, Riverside Building Trades Council	William Perez Executive Secretary 1074 East La Cadena Dr. #8 Riverside, CA 92501 (951) 684-1040 btcbill@sbcglobal.net
Property Tax Distribution	San Bernardino County Auditor-Controller-Treasurer	Bob Wright Property Tax Manager Property Tax Division 222 West Hospitality Lane San Bernardino, CA 92415 (909) 386-8829 rwright@acr.sbcounty.gov
Potential enrollment impacts, school impact fees	Baker Valley Unified School District	Yolanda DeLeon Secretary to the Superintendent (Contact Mark Kemp, Superintendent) P.O. Box 460 Baker, California 92309 (760) 733-4567 mark_kemp@baker.k12.ca.us
Emergency response time	San Bernardino County Sheriff's Department	Doug Hubbard, Administrative Sergeant 225 East Mt. View Barstow, CA 92311 (760) 256-4838 dhubbard@sbcasd.org
Emergency response time, hospitals with an ER	County of San Bernardino Fire Department	Dan Tellez, Captain North Desert Division Station #53 – Baker P.O. Box 660 65 Kingston Circle Baker, CA 92309 (760) 733-4026 dtellez@sbcfire.org
Potential impacts during construction and operation	San Bernardino County Fire Department	Doug Crawford, Planning and Engineer Supervisor Office of the Fire Marshal 620 South "E" Street San Bernardino, CA 92415 (909) 386-8401 dcrawford@sbcfire.org

**TABLE 5.10-28**  
**Agency Contacts for Ivanpah SEGS Socioeconomics**

<b>Issue</b>	<b>Agency</b>	<b>Contact</b>
Potential impacts during construction and operation	San Bernardino County Sheriff's Department	Lance Clark, Captain 225 East Mt. View Barstow, CA 92311 (760) 256-4841 lclark@sbcd.org
Emergency response time to hazardous material emergency releases	San Bernardino County Fire Department	Joe Ashbaker Supervisor, Emergency Response Unit Hazardous Materials Division 620 South "E" Street San Bernardino, CA 92415 (909) 386-8401 jashbaker@sbcfire.org

### 5.10.9 Permit Requirements and Permit Schedule

Permits dealing with the effects on public services are addressed as part of the building permit process. For example, school development fees are typically collected when the Applicant pays building permit fees to the County. No permits are required to comply with the socioeconomic impacts of the project.

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